

BARC Stipendiary Trainee (Category-I) Exam Pattern

- The Exam will be of Objective Type Questions.
- 3 marks will be given for every correct answer.
- 1 mark is deducted from the total for each wrong Answer

Subjects	No of Questions	Time Duration
Questions Related to Subjects in Diploma/B.Sc.	40	1 hour

BARC Stipendiary Trainee (Category- II) Exam Pattern

Stage I- Preliminary Test

- '3' marks for each correct answer
- '1' mark will be deducted for each incorrect answer.
- All candidates with <40% in the General category and <30% in the reserved category will be screened out.

S.No	Subjects	No of Questions	Time Duration
1	Mathematics	20	1 hour
2	Science	20	
3	General Awareness	10	
Total		50	

Stage II- Advanced Test

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- '3' marks for each correct answer will be allotted
- '1' mark will be deducted for each incorrect answer.
- A Merit List of candidates will be prepared after Stage-2 based upon the scores obtained in Stage-2 only.
- All candidates with <30% in the General category and <20% in a reserved category will be screened out.

Subjects	No of Questions	Time Duration
Questions belong to their Respective Trade.	50	1 hour

Stage III - Skill Test

- Based upon the Merit List prepared after Stage-2, candidates will be shortlisted for Stage 3 (Skill Test).
- Candidates clearing the skill test will be shortlisted and empanelled in order of Merit based on the marks secured in Stage 2.
- The number of candidates shortlisted for the Skill Test will depend upon the number of candidates qualifying for Stage 2 but will not exceed 4 - 5 times the number of vacancies in each trade.
- The Skill Test will be based on Go/No-Go basis

BARC Stipendiary Trainee (Category-I) Syllabus

Civil Engineering Syllabus

- S.I. Units
- Theory Of Structures
- Structural Design Specifications
- Estimating And Costing
- Tunneling
- Hydrology

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- Soil Mechanics And Foundation Engineering
- Concrete Technology
- R.C.C. Structure Design
- Steel Structure Design
- Irrigation
- Highway Engineering
- Engineering Economics
- Elements Of Remote Sensing
- Docks And Harbours
- Building Materials
- Building Construction
- Surveying
- Advanced Surveying
- Applied Mechanics
- Strength Of Materials
- Hydraulics
- Water Resources Engineering

Electrical Engineering Syllabus

- Synchronous Motor
- Electric Transmission and Distribution
- High Voltage Engineering
- Electric Illumination
- Electric Machine Design

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- Computation
- Electric Circuit and Ohm's Law
- Synchronous Generator
- Single Phase Motor
- Electric Power Generation

Electronics & Communication Engineering Syllabus

- Analog Circuits
- Analog & Digital Communications
- Networks
- Electronic Devices
- Signals and Systems
- Digital circuits
- Engineering Mathematics
- Electromagnetic
- Control Systems

Mechanical Engineering Syllabus

- Theory of Machines
- Machine Design
- Fluid Mechanics
- Engineering Mechanics
- Strength of Materials
- Refrigeration and Air Conditioning
- <https://www.freshersnow.com/syllabus/>
- Heat Transfer
- Material science
- Hydraulic Machines
- Internal Combustion Engines
- Engineering Metrology
- Production Technology
- Instrumentation and Control
- Industrial Engineering
- Power Plant Engineering
- Nuclear Power Plants New
- Thermoids

Instrumentation Engineering Syllabus

- Basics of Circuits and Measurement Systems
- Communications
- Control Systems and Process Control
- Transducers, Mechanical Measurement, and Industrial Instrumentation
- Signal and Systems
- Analytical, Optical and Bio-medical Instrumentation
- Instrumentation
- Analog Electronics
- Electrical and Electronic Measurements
- Digital Electronics
- Analytical, Optical, and Biomedical

Chemical Engineering Syllabus

- Atoms and Molecules
- Transition Metal Chemistry
- Photochemistry
- Reaction Dynamics
- Stereochemistry
- Organic Reactions
- Spectroscopic Techniques
- Electrochemistry

Chemistry Syllabus

- Some Basic Concepts of Chemistry
- Structure of Atom
- Classification of Elements and Periodicity in Properties
- Chemical Bonding and Molecular Structure
- States of Matter: Gases and Liquids
- Thermodynamics
- Equilibrium
- Redox Reactions
- Hydrogen
- s-Block Element (Alkali and Alkaline earth metals)
- Some p-Block Elements
- Organic Chemistry- Some Basic Principles and Techniques
- Hydrocarbons

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- Environmental Chemistry
- Photochemistry
- Electrochemistry
- Thermodynamics
- Organic Synthesis
- Quantum Chemistry
- Chemical Kinetics
- Bio-inorganic chemistry
- Chemistry of Transition elements
- Inorganic reaction mechanism
- Nuclear chemistry
- Acids and Bases
- Redox Reactions
- Structure and Bonding
- Analytical Chemistry
- Analytical Techniques

Physics Syllabus

- Physical World and Measurement
- Work, Power, and Energy
- Laws of Motion
- Gravitation
- Kinematics
- Solids and Fluids
- Waves and Oscillations
- Electrostatics
- Current Electricity
- Electromagnetic Induction and Alternating Current
- Magnetic Effect of Current and Magnetism
- Optics
- Dual Nature of Matter and Radiations
- Principles of Communication

Mathematics Syllabus

- Simplification
- Permutation and Combination
- Numbers
- Allegation or Mixture
- Area
- Partnership

- Compound Interest
- Time and Work
- Boats and Streams
- Volume and Surface Area
- Decimal Fraction
- Surds and Indices
- Problems on H.C.F & L.C.M
- Height and Distance
- Logarithm
- Chain Rule
- Probability
- Time and Distance
- Square Root and Cube Root
- Simple Interest
- Pipes and Cistern
- Ratio and Proportion
- Problems on Ages
- Average
- Races and Games

BARC Stipendiary Trainee (Category-II) Syllabus

Mathematics Syllabus

- Simplification
- Permutation and Combination
- Numbers
- Allegation or Mixture
- Area
- Partnership
- Compound Interest
- Time and Work
- Boats and Streams
- Volume and Surface Area
- Decimal Fraction
- Surds and Indices
- Problems on H.C.F & L.C.M
- Height and Distance
- Logarithm
- Chain Rule
- Probability

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- Time and Distance
- Square Root and Cube Root
- Simple Interest
- Pipes and Cistern
- Ratio and Proportion
- Problems on Ages
- Average
- Races and Games
- Stocks and Share
- Banker's Discount

Science Syllabus

- Hydrostatics and Archimedes' principle
- Scalar and Vector Quantities
- Parallel Forces
- Work Power and Energy
- Moment
- Refraction of light from Lenses
- Kinematic Theory of Matter
- Energy changes in chemical reactions
- Organic Compounds
- Equation of Motion Physical quantities and Measurements
- Gravitation and Simple Pendulum
- Measurement of small lengths
- Specific Heat and Latent Heat
- Couples and Levers
- Refraction of light from Plane Surface
- Magnetic Field and force on a moving charge
- Acids Bases and Salts
- Carbon
- Thermometer and Thermal Expansion
- Waves and Sound
- Newton's Laws of Motion
- Isolation and hardness of water
- Electromagnetic Induction
- Light and Reflection of light from Plane Surface
- Thermal Conduction
- Oxidation-Reduction
- Nature of Matter
- Applications of Simple Current
- Combustion and fuels

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- Chemical bonding
- Periodic Classification of atoms
- Reflection of light from Spherical Mirror
- Behavior of gases
- Metals and Metallurgy
- Chemical reactions
- Coulomb's Law
- Electric Current and Simple Circuit
- Industrial Chemistry
- Symbols and formulas
- Constitution of Atoms
- Static Electricity

General Awareness Syllabus

- Science – Inventions & Discoveries
- Science & Technology
- General Polity
- International & National Organizations
- Sports
- Important Days
- Indian National Movement
- Countries & Capitals
- Indian History
- Abbreviations
- Budget and Five Year Plans
- Current Affairs, National & International
- Indian Economy
- Books and Authors
- Awards and Honors